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BULLETIN

OF THE

TORREY BOTANICAL CLUB.

Vol. XI.] New York, Nov. and Dec., 1884. **[No. 11 & 12.**

Kansas Fungi.*

By J. B. Ellis and W. A. Kellerman.

Cercospora Apocyni.—Amphigenous, on small (1–3$^{mm.}$) brown spots with a narrow raised border; often occupying only a small (1$^{mm.}$) circular area on the brown spots, or sometimes several small white patches of conidia on the same spot; hyphæ very short, 16–20 x 2.5μ, tufted, hyaline, simple, entire; conidia narrow-cylindric, 45–60 x 2.5μ, granular and becoming faintly 3–4-septate.

The spots are at first purplish brown, with a purplish border, but become rusty brown except where whitened by the conidia. On leaves of *Apocynum*. Aug. No. 601.

Cercospora Desmodii.—On reddish brown, roundish or irregularly shaped and rather indefinitely limited spots 2–3$^{mm.}$ in diameter; hyphæ mostly hypophyllous, 70–80 x 3–4μ, brown, 1–3-septate, undulate or often abruptly bent above, rising in loose spreading tufts of 6–8 from a minute tubercular base; conidia oblong-cylindric and nucleate, becoming clavate-cylindric and mostly 3-septate, 30–50 x 3.5–4μ.

The spots become more or less confluent and the leaf assumes a reddish brown hue. On *D. acuminatum*. July. No. 585.

Cercospora Cephalanthi.—On orbicular (1–4$^{mm.}$) red-brown spots with a narrow, dark, raised border; hyphæ mostly epiphyllous, tufted, brown, continuous or faintly septate 24–30 x 3–4μ, at length elongated (40–56μ) and crooked or undulate above; conida (mature?) subfuscous, oblong-cylindric, 20–30 x 3–4μ, 1–3-septate.

The tufts of hyphæ are very minute and meagre and are seen with difficulty. The conidia, are not abundant. On leaves of *C. occidentalis*. July. No. 582.

Cercospora Gymnocladi.—Mostly epiphyllous on suborbicular, grayish brown spots (3–4$^{mm.}$) with a discolored border; hyphæ in minute punctiform tufts, simple, continuous, brown, 18–25 x 4μ; conidia clavate-cylindric, brown, 3–6-septate, 45–60 x 5–6μ, but often wanting the narrow base, and much shorter (25–35μ), 2–3-septate and occasionally constricted at the septa.

On leaves of *Gymnocladus Canadensis*. July. No. 571.

Cercospora Pentstemonis.—Amphigenous, on orbicular (.25–.5$^{cm.}$) purplish brown spots (whitening out), with a narrow raised border surrounded by a purplish discoloration; hyphæ brown, continuous, nearly straight, subattenuated and more or less denticulate above, 25–35 x 3μ, forming dark tufts 70–80μ across and thickly scattered over the spots; conidia brownish, swollen or enlarged above, 2–2.5μ thick, and,with the slender filiform base, 40–75μ long, nucleate, becoming faintly 1–3-septate.

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* Continued from page 116.

Many of the conidia lacking the slender base are much shorter (20–25μ). On leaves of *Pentstemon Cobœa* (No. 546) and *P. grandiflora* (cult.) No. 566. June.

CERCOSPORA CHIONEA.—Amphigenous but mostly epiphyllous, on large (.5–$1^{\mathrm{cm.}}$, or, by confluence, 3–$4^{\mathrm{cm.}}$) dark reddish brown spots with a brown, yellow-shaded, but not raised, border; hyphæ densely tufted, subhyaline, mostly 18–30 x 4–5μ, but often elongated to 35 or 40μ and then somewhat undulate or crooked above; conidia vermiform or clavate-cylindric, 54–90 x 4–5μ and 3–8-septate.

The conidia are very abundant and appear to the naked eye like a sprinkling of white powder on the brown spots. Different throughout from *C. cercidicola*, Ell. On leaves of *Cercis Canadensis*. July. No. 580.

CERCOSPORA MURINA.—Hypophyllous, on large (.5–$1^{\mathrm{cm.}}$), roundish, indefinitely limited, dirty brown spots (dirty white above); hyphæ effused, mouse-colored, branched, septate, clear fuscous brown, 75–100 x 3–4μ; conidia oblong or oblong-cylindric, 3-septate, brownish, sometimes slightly constricted at the septa, 25–35 x 4–5μ.

Looks like a fine mouse-colored down overrunning spots previously occupied (?) by another *Cercospora* (*C. granuliformis*, E. & H.)

CERCOSPORA VELUTINA.—Amphigenous; hyphæ pale olivaceous, simple, continuous, more or less bent and toothed above, forming a dense velvety growth over the surface of little dark-colored tubercular swellings $1^{\mathrm{mm.}}$ or less in diameter, which are collected in groups or irregularly scattered over the surface of the leaf; conidia pale olive-brown, subequal or attenuated above, curved, sparingly septate 75–100 x 3μ.

On leaves of *Baptisia*. Aug. No. 622.

RAMULARIA GRINDELIÆ.—Amphigenous, erumpent, punctiform; hyphæ densely tufted, simple, hyaline, straight, 18–25 x 3–4μ; conidia cylindric, straight or slightly curved, hyaline, 1–2-septate, 20–40 x 3–4μ.

The tufts of hyphæ (150–200μ in diameter) are collected in little groups forming rusty yellow specks thickly scattered over both sides of the leaf and finally whitening out.

This might be referred to *Cercospora* from its habit and mode of growth, but the conidia and hyaline hyphæ are those of *Ramularia*. On leaves of *Grindelia squarrosa*. Aug. No. 616.

SPHÆRELLA DECIDUA.—Perithecia visible on both sides of the leaf, of coarse cellular structure, depressed-globose, 100μ in diam., asci oblong, sessile, 50 x 15μ; sporidia crowded or biseriate, oblong or oblong-pyriform, uniseptate and constricted, mostly a little curved, 12–11 x 4–5μ; perithecia in small (1–$1.5^{\mathrm{mm.}}$) round, dull white, translucent spots with a narrow raised border; spots on dead, discolored parts of the leaf which finally fall out and leave irregular-shaped holes as if the leaf had been eaten out by insects.

On living leaves of *Vernonia*. June. No. 556. Also on *Scrophularia nodosa* (No. 563); spots white and more confluent and mostly not on dead, but living green parts of the leaf.

SPHÆRELLA CERCIDICOLA.—Perithecia erumpent (100μ) scattered, mostly on the upper side of the leaves, at length broadly perforated above; asci oblong-cylindric, 35 x 5μ; sporidia closely packed, overlapping and subbiseriate, oblong-pyriform, 1-septate, 11–13 x 2.5–3μ, slightly curved and constricted.

On fallen leaves of *Cercis Canadensis.* June. No. 550.

SPHÆRELLA LACTUCÆ.—Epiphyllous, on dark brown (2–4μ), concentrically wrinkled spots with a distinct raised border; perithecia erumpent subglobose (120–150μ), of coarse cellular structure; asci 40–75 x 12–14μ, sessile, oblong; sporidia biseriate, ovate-oblong, 1-septate and constricted at the septum, 14–16 x 5–μ, ends obtuse.

On living leaves of *Lactuca Canadensis.* Aug. No. 619.

The Nectar-Glands of Apios tuberosa.

By AUG. F. FOERSTE.

The flowers of *Apios tuberosa* are arranged in dense panicles, which have the appearance of racemes. At the base of the first main axis are two small bracts, one of them frequently subtending another panicle. The main axis of the second panicle has also two bracts at its base, one of which sometimes subtends a third flower-cluster in an insignificant rudimentary state. The third flower-cluster rarely, if ever, develops. The second panicle arises so close to the base of the first panicle that both seem to spring from the axil of the leaf.

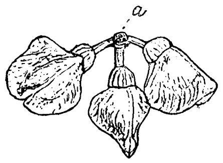

Fig. 1

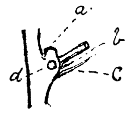

Fig. 2

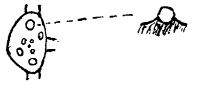

Fig. 3

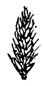

Fig. 4

Although but one of the basal bracts usually subtends a panicle, the other not rarely subtends a minute rudimentary flower-cluster, which rarely develops its flowers. The main axis of each panicle bears at short distances the secondary axes or racemes, each of which is subtended by a bract. Each raceme (Fig. 1) bears three flowers, all of them subtended by bracts. Two of the flowers are placed at either side of each raceme, the third being placed just above the bract subtending the raceme. The bract (Fig. 2 *b*) of the third flower is smaller than the one subtending the raceme (Fig. 2 *c*). The three flowers are placed at the very base of the short stubby axis of the raceme, and are inserted at about the same height. The top of this axis (Fig. 2 *a*) suddenly becomes truncated, and on the flattened surface thus produced may be seen the remaining aborted flowers of the raceme. Under a low power of the miscroscope they appear as so many clusters of lanceolate, thin scales. These clusters usually wither and fall off a short time before the flowering of the three